

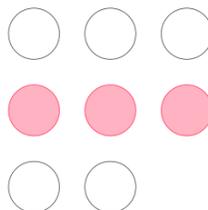
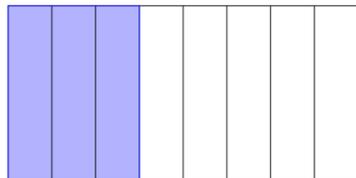
Fractions, Mixed Numbers, and Rational Expressions

A number that describes a part of a whole is called a _____.

A fraction whose numerator and denominator are integers is called a _____.

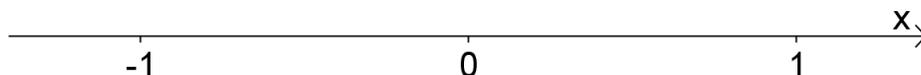
Ex 1.

Name the fraction represented by each shaded region.



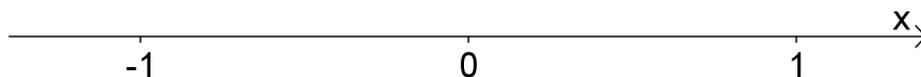
Ex 2.

Graph $\frac{3}{4}$ on a number line.



Ex 3.

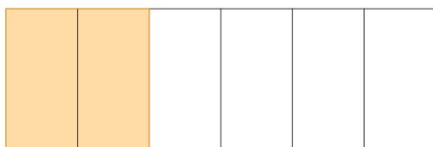
Graph $-\frac{5}{8}$ on a number line.



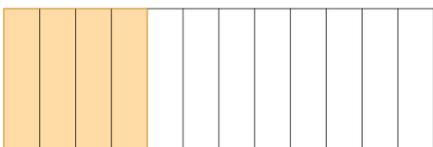
Note: All of these are equal: $-\frac{5}{8} = \frac{-5}{8} = \frac{5}{-8}$



When two fractions name the same number (ex: $\frac{1}{3}$, $\frac{2}{6}$, and $\frac{4}{12}$), we call them _____.



We can get equivalent fractions by multiplying or dividing the top and bottom by the same number.



Ex 4.

Fill in the missing number so that the fractions are equivalent.

$$\frac{5}{9} = \frac{\quad}{36}$$

$$\frac{-24}{42} = \frac{4}{\quad}$$

Ex 5.

Write the following fractions in simplest form:

$\frac{3}{6}$

$\frac{4}{1}$

$\frac{0}{5}$

$\frac{8}{0}$

$\frac{7}{7}$

When comparing fractions with the **same denominator**, just **compare numerators**. (ex: $\frac{3}{8} < \frac{5}{8}$)

When they have **different denominators** (like $\frac{1}{2}$ and $\frac{2}{5}$), then you have to **write equivalent fractions** that have the same denominator before comparing.

Ex 6.

Use $<$, $>$, or $=$ to write a true statement.

$\frac{1}{2} \square \frac{2}{5}$

$-\frac{2}{7} \square -\frac{12}{42}$

$\frac{6}{8} \square \frac{15}{20}$

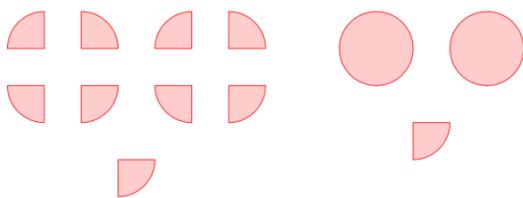
A fraction where absolute value of numerator is bigger than or equal to the absolute value of denominator is called an _____.

ex: $\frac{11}{4}$ $\frac{-7}{2}$ $\frac{8}{8}$

An integer combined with a fraction is called a _____.

ex: $2\frac{1}{4}$ $-5\frac{2}{3}$ $1\frac{1}{2}$

Note: $2\frac{1}{4} = 2 + \frac{1}{4}$



If you think about pizzas divided into four slices, then $\frac{9}{4}$ would represent 9 slices. Putting the 9 slices together, you could make 2 whole pizzas and have 1 slice left.

So, $\frac{9}{4} = 2\frac{1}{4}$

To convert improper fractions to mixed numbers, _____, write the quotient, and then the remainder over the denominator.

Ex 7.

Write $\frac{13}{3}$ as a mixed number.

Ex 8.

Write $-\frac{37}{4}$ as a mixed number.

To convert mixed numbers to improper fractions, _____ the whole part by the denominator, add the numerator, and put the result over the denominator.

Ex 9.

Write $6\frac{2}{3}$ as an improper fraction.

Ex 10.

Write $-11\frac{2}{9}$ as an improper fraction.

Ex 11.

Write 14 as an improper fraction.